



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,326	09/18/2006	Andreas Dutt	R.307679	7419
2119	7590	09/11/2007		
RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314			EXAMINER GIMIE, MAHMOUD	
			ART UNIT 3747	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/593,326

Applicant(s)

DUTT ET AL.

Examiner

Mahmoud Gimie

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruthardt et al (US 6,406,272) in view of Crowley et al. (5,133,645).

Ruthardt et al. discloses in a high-pressure pump for a fuel injection system of an internal combustion engine, the high-pressure pump having at least one pump element, which has a pump piston (12) which is guided displaceably in a cylinder bore (18) of a housing part of the high-pressure pump and is driven in a reciprocating motion and which, in the cylinder bore, defines a pump work chamber, into which fuel is aspirated via an inlet valve (26) upon the intake stroke of the pump piston and from which fuel is positively displaced upon the pumping stroke of the pump piston, and the inlet having valve a pistonlike valve member (30), which with a sealing face cooperates with a valve seat (36) for controlling the communication of the pump work chamber with the fuel inlet, and the valve member is urged in the closing direction by a closing spring (40) and by the pressure prevailing in the pump work chamber and in the opening direction by the pressure prevailing in the fuel inlet, and the valve member, with a head (32) on which the sealing face is embodied, is disposed in the pump work chamber and protrudes from the pump work chamber with a shaft (figures 3 and 4) adjoining the

Art Unit: 3747

head, and the closing spring (40) is disposed outside the pump work chamber (not numbered) and engages the shaft.

Ruthardt et al. do not show the valve seat (36) formed on the housing part [of the high pressure fuel pump], but rather it is on a separate valve plate (24).

Crowley et al. disclose a valve seat formed on a housing (130) of a high-pressure fuel pump, see figure 2.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Ruthardt et al. by forming the valve seat on the pump housing as disclosed by Crowley et al. as this would be "obvious to try" from a finite number of identified, predictable solutions for reducing the number of components, with a reasonable expectation of success.

Regarding claim 7, wherein the region of the housing part in which the closing spring is disposed is tightly closed off from the outside of the housing part by means of a closure element (figure 1 Ruthardt), and wherein the fuel inlet discharges into this region.

Regarding claim 8, further comprising a free flow cross section (figure 4 or Ruthardt) between the shaft of the valve member and the bore, through which free flow cross section fuel flows out of the region into the pump work chamber in the open state of the valve member.

Regarding claim 9, wherein the small diameter bore has a portion discharging into the pump work chamber, between which portion and the shaft of the valve member a flow cross section is uncovered; wherein the small diameter bore has a second portion discharging into the region, in which portion the shaft of the valve member is guided

displaceably; and that the first portion of the bore communicates with the region, see figures 3 and 4 of Ruthardt.

10. (New) The high-pressure pump as defined by claim 6, wherein the sealing face of the valve member is embodied as convex toward the valve seat, and in particular is embodied as at least approximately in the form of a portion of a sphere.

Regarding claim 11, wherein the sealing face of the valve member is embodied as convex toward the valve seat, and in particular is embodied as *at least approximately* in the form of a portion of a sphere, see figures 3 and 4 of Ruthardt.

Regarding claim 12, wherein the sealing face of the valve member is embodied as convex toward the valve seat, and in particular is embodied as *at least approximately* in the form of a portion of a sphere, see figures 3 and 4 of Ruthardt.

Regarding claim 13, wherein the sealing face of the valve member is embodied as convex toward the valve seat, and in particular is embodied as at least approximately in the form of a portion of a sphere, see figures 3 and 4 of Ruthardt.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references show high-pressure fuel pumps.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 3747

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahmoud Gimie whose telephone number is 571-272-4841. The examiner can normally be reached on Monday-Friday between 7 a.m. -3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen K. Cronin can be reached on 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MG


MAHMOUD GIMIE
PRIMARY EXAMINER